



# Current Survey of Knowledge of **Adolescent and Young Adult Heroin Use Prevention**

A review of current literature pertaining  
to the prevention of heroin and other  
substance use among adolescents and  
young adults.

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## Executive Summary

The use of heroin among American youth has risen steadily over the past decade. As part of a greater effort to reduce the rate of substance abuse among adolescents and young adults, the Massachusetts Department of Public Health, Bureau of Substance Abuse Services initiated a review of current literature on community-based heroin prevention. The goal of this review is to present a summary of findings relating to youthful heroin use and prevention programming. Specific objectives include the presentation of epidemiological literature on characteristics of adolescent heroin use, and an overview of community-based primary prevention initiatives.

A search of medical and academic databases and library holdings was conducted using a variety of keywords relating to adolescent heroin use, use of other substances, and primary prevention programming. Substance abuse organizations were contacted or their resource lists and publications searched. Selected articles were skimmed and ranked according to their focus on heroin, adolescence, illicit drugs, community-based prevention, community coalitions, environmental approaches, use of a risk/protective factor model, and primary prevention. Those articles with the greatest focus on these areas were read and summarized.

In total, 62 articles are included in this review. Of these, 35 address heroin and other substance use, and 27 pertain to prevention. Very few articles that specifically addressed primary prevention of heroin use were found; only two programs specifically addressed heroin in their program objectives or evaluation results. Additional limitations include a lack of standardized units of analysis, variables studied, methodologies, and population samples among existing studies.

This review yielded several important clues regarding heroin prevention but did not produce significant data regarding program strategies. Adolescent heroin users were found to share many characteristics with adolescent users of other substances, including risk factors relating to family, peers, community, environment, and individual psychosocial characteristics and behaviors. Social, community and peer norms were shown to have a particularly strong effect on the decision to use heroin and on method of use. Community coalitions to prevent adolescent and young adult substance use consistently reported positive outcome-related effects including increased rates of community action, changes in programs and policies regarding substance abuse, and greater community awareness. However, findings were mixed regarding the impact of coalition activities on rates of adolescent tobacco, alcohol or other drug use.

Current literature suggests that community coalitions may be effective agents for positive community outcomes. Coalitions could potentially focus on decreasing risk factors and increasing the protective factors that affect youths' substance use decisions, particularly through addressing social norms, and increasing adolescents' skills or "connectedness" to family and school. Neither changing youths' environments nor adjusting individual behaviors alone is sufficient; in combination, changing both shows promise.

The need for further research into effective strategies for preventing heroin use among adolescents and young adults is highlighted. Additional research challenges include increasing the understanding of the relationships between heroin use and the use of other substances. Evaluations of the efficacy of broad substance abuse prevention programming on heroin use could provide insights on the impact of mediating variables including race/ethnicity and gender. Community/environmental intervention research that attempts to isolate the effect of specific program components is also indicated.

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# Introduction

The use of heroin among American youth has risen steadily over the past decade (Gordon 2002). This has been partly attributed to an increase in high-purity, low-cost heroin. In the New England states, Massachusetts has among the highest proportion of admissions for heroin, with admissions over three times the national average [Massachusetts Department of Public Health (MDPH) 2004].

A review of current literature on community-based heroin prevention was initiated as part of a greater effort, led by the Massachusetts Department of Public Health's Bureau of Substance Abuse Services (the Bureau), to reduce the rate of substance abuse among 13-to 24-year-olds. The overall goal of this review is to present a summary of findings relating to adolescent and young adult heroin use and community-based prevention programming. Implications of these findings are presented to assist community coalitions and substance abuse prevention leaders in their heroin prevention efforts. Specifically, the review seeks to: 1) describe epidemiological literature on characteristics of adolescent heroin use; and 2) to present an overview of community-based primary prevention of heroin use. The latter includes prevention objectives, target populations strategies employed, and a description of evaluation efforts and findings.

Consistent with the Bureau's heroin prevention programming and objectives, an emphasis is placed on literature that addresses environmental risk and protective factors through the formation and activities of community coalitions. For the purposes of this review, a *coalition* refers to an organized group of community members that includes representation from the local government, law enforcement, education, parents, treatment and service providers, and others (MDPH 2004). An *environmental approach* is one that addresses

community and social norms, availability of substances, the physical environment, social and economic conditions, and other factors that influence an individual's choice to use drugs (MDPH 2002). Additional emphasis is placed on programs that employ a risk/protective factor model and that have adopted science-based strategies.

The review is organized as follows. *Part one* describes the search including sources, search parameters and criteria for inclusion in the review, and briefly summarizes findings. *Part two* presents findings related to use of heroin and other substances among adolescents. The emphasis is on risk factors and the section primarily includes studies that examine the habits and characteristics of a certain population. A small number of broader epidemiological and theoretical articles are also included. *Part three* discusses findings relating to community-based heroin and other substance abuse prevention programs. *Part four* identifies possible implications for present and future prevention efforts.

Findings and other information are included as they were presented in the literature. A significant body of literature relating to heroin treatment, harm reduction, injection, and debates regarding legalization and other macro-level policy questions is not reviewed. Additional heroin-specific literature was found, but not reviewed, that addressed the following areas: treatment, injection/HIV prevention, and overdose prevention. Though a concentrated attempt was made to thoroughly explore the currently available literature, this review may not include all currently available literature on topics covered. Discussion of the literature, including implications for practitioners, solely reflects the literature cited in this review. New or unidentified current literature would undoubtedly impact the discussion.

## Part One—Methodology

A search was conducted using MedLine, Gale Group Expanded Academic ASAP and Health Reference Center Academic databases, Boston Public Library catalogues and holdings at the library at the Massachusetts Department of Public Health. Keywords “heroin” “opiates” “opioids” “adolescents” “substance abuse” “prevention” “community-based” “community coalition” and “illicit drugs” were used in varying combinations. National, regional and limited international governmental and private substance abuse organizations were contacted or their resource lists and publications searched. Citation lists and bibliographies from identified articles were also searched.

Articles selected from these sources were skimmed and ranked according to their focus on heroin, illicit drugs, adolescence, community-based prevention, community coalitions, environmental approaches, use of a risk/protective factor model, and primary prevention. Those with the greatest focus on these areas were read and summarized for the review. Recent articles were prioritized. Certain additional articles were included for content related to questions or findings of particular interest to the review, or for general background content on adolescent substance use and community-based prevention.

In total, sixty-two articles and reports were read and summarized. Of these, thirty-five pertained to heroin use and twenty-six pertained to prevention. Very few articles that specifically addressed primary prevention of heroin use were identified. This led to the inclusion of a greater number of articles on prevention of other substances—primarily alcohol, tobacco and marijuana—than originally planned.

### Articles on Adolescent Use of Heroin and Other Substances

Thirty-five articles relating to the use of heroin and other substances were reviewed. Of these, 25 specifically examined heroin use. The remaining 10 articles focused on alcohol, tobacco and marijuana. Other substances including inhalants, cocaine/crack, hallucinogens, ecstasy, and methamphetamines were also addressed, though less often. Articles that addressed heroin treated it independently or in combination with other drugs. Only on the occasion of “injection drugs” were studies using non-specific drug categories counted as having heroin-specific content. Articles on heroin use discussed: 1) risk and protective factors generally associated with heroin; 2) early stages of use (exposure/opportunity); and 3) method of use and factors associated with the transition from non-injection drug use to injection drug use. A small body of literature relating to epidemiological trends in heroin use was also reviewed.

Articles reviewed tended to:

- **analyze broad sources of data, e.g. National Household Survey on Drug Abuse (NHSDA) for specific trends or focus on a relatively small sample from a specific sub-group, e.g. residents of an adolescent drug treatment center or homeless youth in a specific locale**
- **discuss specific or micro-level risk factors, such as “extra-familial sexual abuse”, rather than broad environmental categories**
- **conduct some level of analysis of race/ethnicity and gender differences**

- **focus on associated risks vs. protective factors**
- **include some kind of comparison to the users of other substances**
- **stress the limitations of their findings and the need for additional research**

## **Articles on Prevention Programs to Prevent Adolescent Heroin and Other Substance Use**

### **Heroin Prevention Programming**

Twenty-seven articles on heroin and substance use prevention addressing 13 prevention programs were identified and reviewed. Of the 13 programs, two specifically addressed heroin content in their program objectives or evaluation results. Both of these programs were based in Europe (Austria, Denmark) and little English-language information on the program was available.

### **Coalition/Environmental Strategies Substance Abuse Prevention**

The majority of articles reviewed concerned community coalitions to address adolescent substance abuse. All included some form of evaluation. Twenty-one discussed a specific program while five provided an overview of current research/findings. Programs emphasized collaboration and took an environmental approach to substance abuse prevention.

A very small number of articles that met the search criteria were reviewed but were not included because: a) they focused on a highly technical aspect of evaluation and did not present results relating to program effectiveness (Schatz et al. 1993, Stephenson 2002); or b) the relationship between article findings to the key elements of this review (heroin, coalitions, environmental approaches) was not significant or clear (Rollin et al 2000). A limited number of articles on school-based programming were reviewed for the effect on heroin use (Skara et al 2003, Botvin et al 2000). A final article on the role of medical providers and school health centers was also reviewed (Hopper et al 2000).

## Part Two—Findings Relating to the Use of Heroin and Other Substances by Adolescents

Findings relating to the use of heroin and other substances by adolescents are presented following a risk/protective factors model. *Risk factors* are social/cultural and individual and environmental factors that contribute to drug use. Protective factors are factors that mediate or moderate risk. *Protective factors* apply to differences in outcomes for individuals exposed to similar risks. Protective factors are not just those factors opposite of related risks; it should not be assumed that the opposite of an identified risk factor will necessarily fill a protective role (Hawkins et al 1992).

Risk and protective factors can be grouped in many different ways. The Center for Substance Abuse Prevention defines six general categories (MDPH 2002). These categories will be used to describe factors identified in the reviewed literature:

- ▶ **Society/environment – or the social, cultural, and economic conditions affecting a group or individual**
- ▶ **Family**
- ▶ **Community – conditions in the specific area where an individual lives**
- ▶ **School**
- ▶ **Peers**
- ▶ **Individual – including biological, behavioral and psychological factors**

A risk and protective factor approach can be used to identify and buffer antecedents to drug use. It can also help communities identify resources and design appropriate prevention strategies (Hawkins et al 1992, MDPH 2002).

### Limitations

Due to the lack of standardized units of analysis, variables studied, methodology, and population, current literature does not support generalizations or comparisons across existing studies, or prioritization or ranking of identified risk factors (Hawkins et al 1992, Noell et al 2001, Tang et al 1996, Flom et al 2001, Roy et al 2003, Kane et al 1999). The literature does not provide evidence that these factors work in any consistent or causal way. Whereas all factors have been associated with adolescent substance use, no single factor or combination of factors has been shown to be a *necessary condition* or *predictor* of the use of heroin or other drugs. Small samples sizes, selection bias and study attrition, concerns regarding self-reported and recalled data, and cross-sectional data limit the ability to address the causal relationship between risk factors and use outcomes.

## Risk and Protective Factors Relating to the Use of Alcohol, Tobacco, and Other Drugs

A 1992 paper reviewed literature to date that identified risk and protective factors for alcohol and other drug use (Hawkins et al 1992), and a 1996 review of National Institute on Alcohol Abuse and Alcoholism, National Cancer Institute and the Center for Substance Abuse Prevention (Jansen et al 1996) identified the following risk factors:

### Summary of Risk and Protective Factors for Adolescent Alcohol and Other Drug Use

#### Risk Factors

Society and Environment	Cultural norms regarding substance use
Family	Family history of drug use Family management practices <sup>1</sup> Favorable parental attitudes toward drug use Family conflict Low family bonding
Community	Community norms regarding substance use Exposure to advertising that promotes drinking Availability of substances Perceived importance of drug distribution system in one's neighborhood Poverty Neighborhood disorganization
School	School failure/low academic achievement Low commitment to school
Peers	Peer rejection while young Association with drug using peers Peer encouragement of drug using
Individual	Biological and genetic factors Psychiatric illness Sensation seeking <sup>2</sup> Early and persistent problem behaviors Poor social skills development Higher I.Q., reading and test performance <sup>3</sup> Alienation and rebelliousness/negative social values Favorable attitude toward drug use Early onset of drug use



### Protective Factors

Society and Environment	Laws that regulate or make substances illegal Taxes on legal substances
Family	Warm positive relationship among family members Shared commitment to education and with societies general values Attendance of religious services High aspirations for children's success
Community	Involvement of caring adults in situations where children do not have an "intact family unit" External support system that encourages and reinforces a child's coping efforts and strengthens them by inculcating positive values.
Peers	Positive peer relationships
Individual	Negative attitudes toward drugs/a belief that drugs are harmful Positive temperament/disposition

1 Various findings relating to family management practices include: lack of or inconsistent parental discipline; low parental aspirations for children's educational achievement; unrewarding family structure; and negative communication patterns (Hawkins et al 1992)

2 Based on a scale that measured experience seeking, thrill/adventure seeking, disinhibition, and boredom susceptibility (Tang et al, 1996).

3 Higher I.Q., reading and test scores have been associated with early more frequent adolescent alcohol and higher lifetime levels of cocaine use in two separate studies. Conversely, intellectual ability has been shown to have an inverse relationship to delinquency (Hawkins et al, 1992).

Researchers have continued to identify factors that contribute to adolescent substance use. Seven additional studies that examined adolescent substance abuse not specific to heroin were reviewed for this paper. Findings include:

- ▶ Association between "disadvantaged neighborhood environment" and exposure-opportunity in the very early stages of drug development (Crum et al 1996)
- ▶ Further evidence of the role of family as a source of both a risk and protective factors. Risk factors included drug-using siblings, parent drug and/or alcohol use, including choice of drug, permissive views or failure to set limits. High level of connectedness, direct involvement/communication regarding tobacco and marijuana showed a protective effect (Vakalahi 2001)
- ▶ Further evidence of peer attitudes and the perception of peer use as a risk factor (Musher-Eizenman et al 2003)
- ▶ Gender differences including greater exposure to substances/opportunity to use among boys, and variable findings relating to risk factors including susceptibility to peer pressure and the impact of family drug use (Musher-Eizenman et al 2003, Wu et al 2003)

▶ Association between teen part-time and full-time employment and increased rates of recent or heavy use (Wu et al 2003)

▶ Further evidence of the role of previous drug use as a risk factor (Bennett et al 2000)

### Risk and Protective Factors for Adolescent Heroin Use

Factors associated with heroin were consistent with those identified generally for substance use among adolescents. Current literature on heroin use does not necessarily address all of those risk factors identified for substance use in general. A lack of, for example, community-related factors, does not necessarily indicate that important community-level risks do not exist. Rather, these and similar omissions may be understood as gaps in the current literature regarding heroin use, and can be treated as questions for future research.

### Summary of Factors Associated with Adolescent Heroin Use

Society/environment	Price
	Social/conduct norms relating to drug use
Family	Family connectedness
	Family drug and alcohol use
	Divorce
	Family trauma/dysfunction
Community	Exposure to violence and extra familial abuse
School	Poor school performance
Peers	Perceived peer drug use
	Actual peer drug use
	Peer/Conduct norms <sup>1</sup>
Individual	Prior use of alcohol, tobacco, inhalants and other drugs (ATIOD)
	Early initiation of ATIOD use
	Polysubstance use/dependence
	Frequency of drug use associated with injection
	Length of use associated with injection
	Institutionalization during childhood
	Homelessness/running away from home
	Delinquency/illegal activities
	Truancy/dropping out of school
	Gender
	Sexual orientation
	Race/ethnicity
	Susceptibility to peer pressure
	Poor emotional control
	Depression and other psychiatric disorders

<sup>1</sup> Peer attitudes regarding drug use, specific drugs, and peer attitudes and behaviors regarding method of use (e.g., injection) and other use-related behaviors (e.g., combination of substances) were associated with individual drug use behaviors (Johnson et al 2002, Roy et al 2003, Flom et al 2001). See section "Social Norms" for further discussion.

ADDITIONAL FINDINGS

Several papers took a different approach to studying heroin use. Rather than study individual subjects, these researchers looked at broad trends in heroin use. Based on their observations, they have proposed certain theories to help understand how and why heroin is used among certain groups.

Open Marginality

The concept “Open Marginality” (Agar et al 2001) was proposed by a group of researchers working to establish a “trend theory” that would help predict developing heroin epidemics within communities. Based on their observation that heroin always clusters among some social types and not others, the researchers wondered, “Do similar historical processes shape the different kinds of risk groups among whom heroin epidemics have occurred?” In response to this question, the researchers proposed that social groups that have experienced epidemic heroin use share the common experience of “open marginality”. *Open marginality* refers to a historic period in time during which a social group finds itself moving to a new place in society. This change creates uncertainty in regard to social roles, expectations, and identity. While it cannot predict individual risk, the concept of Open Marginality can help to better understand how identified risk factors of race, gender, economic and social class can combine with political and historical forces and market conditions to increase the risk of heroin use for different social groups. The following table lists three examples of groups that experienced a heroin epidemic, and that showed signs of Open Marginality.

Heroin Epidemics and Open Marginality (Agar et al 2001)

Epidemic Period	Concurrent Social Change	Market Conditions
Early 1900's among middle class white women	Increased participation in work force, suffrage movement	Availability of opiate-based medicines and promotion by medical professionals specifically to women
1960's – urban African-Americans	Acceleration of the Civil Rights Movement, cultural identity shift from “Negro” to “Afro-American”, Civil Rights Act 1964	Mafia reorganization that targeted urban minorities/new economic opportunities related to heroin trafficking
1990's – suburban white working class adolescents	Increasing movement of industry to southern states and the developing world. Decline of traditional blue-collar communities.	Entry of Colombian drug traffickers into the heroin trade.

## Heroin compared to other substances

Direct comparisons between risk factors for general substances and for heroin cannot be supported by the literature due to the methodological limitations discussed earlier. However, some broad similarities appear. Risk factors relating to society and environment, community, family, peers, school and individual factors, appear in both heroin and general substance abuse literature. Factors identified as having the greatest potential effect, including social and peer norms and prior substance use, are also similar. Other key factors that are associated with adolescent substance abuse, including low educational attainment, delinquency, and exposure to violence, were also identified as possible predictors of the transition from non-injection to injection drug use (Fuller et al 2002).

Differences among risk factors, as compared with other drug use, are also evident. There are several possible reasons for this. First, differences may reflect the *current state of substance abuse research* as evidenced by the average date of publication of heroin versus other substance use literature included in this review. This review has relied primarily on survey literature for information relating to risk/protective factors for general substance use. Survey articles were, by chance, older than much of the heroin-specific literature. Only those more recent studies that addressed a particularly notable gap in heroin literature or that highlighted an unusual finding: family, employment, and neighborhood disadvantage were included. As the research literature has progressed, it has increasingly examined more detailed factors (such as homelessness). It has also examined the moderating effects of factors such as race/ethnicity, gender, the effect of specific substances, and particular points along the continuum of use. Therefore, some differences among risk factors for heroin versus other substances may be attributed to the time periods in which the articles were written.

## Epidemiological Trends

Literature that examined epidemiological trends was reviewed to the extent that it sought to shed light on environmental factors that contribute to adolescent heroin use. This included:

- ▶ examination of trends in lifetime, recent, and injection heroin use among arrestees in Manhattan (Johnson et al 1998)
- ▶ review of 35 years of ethnographic and survey research on heroin and other drug use in New York (Johnson et al 2002)
- ▶ comparison of trends in new treatment demand, observed incidence, and age-specific population rates for treated heroin users in two geographical areas in England (Millar 2001)

Data from these studies demonstrate geographic and demographic variation in the progression of heroin epidemics. This variation was attributed in part to social and conduct norms. Norms influence epidemic patterns of heroin use by limiting or expanding the pool of available new users, often following an initial explosion of use. (Johnson et al 2002, 1998).

## Pathways of Influence

Though not specific to heroin, a third approach to understanding and addressing the myriad risks is proposed by Sale (Sale et al 2003). The authors studied risk and protective factors and substance use among high-risk youth. They identified *pathways of influence* within and between external and internal risk factors and substance use. Connectedness to family, school-connectedness, and self-control are identified as crucial links. The article proposes that the pathways of influence model can help providers focus resources by reducing the number of important predictors. Its central implication is that youth need to build connections to positive and meaningful environments, that just changing the environment or changing individual orientations (e.g. resistance) is not enough. The authors suggest that their findings confirm the importance of comprehensive prevention programs and give specific mention to “the fostering of conventional anti-substance use attitudes among parents and peers, the importance of parental supervision, and development of strong connections between youth and their family, peers, and school.”

Differences in the research may also point to ways that heroin is unlike other drugs. Six studies specifically compared users of heroin to users of other substances. Several key differences were reported:

- ▶ **More severe polysubstance dependence among heroin users (Hopfer et al 2000)**
- ▶ **Greater instances of injection use (Hopfer et al 2000)**
- ▶ **Different rates of transition from alcohol and tobacco to marijuana (66% of those given the opportunity to use the drug) versus heroin (20% of subjects given the opportunity to use the drug) (Van Etten et al 1999)**
- ▶ **Different rates and patterns of use among race and gender groups for different substances (Xueqin et al 2000)**
- ▶ **In two analyses of heroin use patterns following the attacks on the World Trade Center in New York, different response to traumatic events than users of other substances (Factor et al 2002)**

Though inconclusive, some of the literature suggests that general findings regarding substance use, including risk and protective factors and the prevention efforts that follow, may not be generalizable across substances (Musher-Eizenman et al 2003). Possible implications of this are discussed in later sections of this review.

## IN-DEPTH

A handful of factors figured prominently in the literature and/or were discussed as having a particularly strong association with heroin use in both population-based and broad or theoretical treatments of heroin use. Those receiving the greatest attention were social norms and prior substance use. Race/ethnicity and gender were also examined and are briefly discussed.

### Social Norms

The role of social norms—particularly among peer groups—was highlighted by a number of authors. Population-based studies found peer drug use (Tang et al 1996 Roy et al 2003), peer norms (Flom et al 2001), susceptibility to peer pressure (Tang et al 1996) and access to drugs through peers or other social networks (Tang et al 1996, Van Etten et al 1999) to be highly correlated to heroin use.

Epidemiological surveys also suggest that “norms of the heroin subculture exert a far more powerful influence on heroin users than do government edicts and criminal justice initiatives.” An analysis of trends in heroin use patterns by birth cohort identified significant variation in rates

of transition from marijuana, alcohol and tobacco to hard drugs. This suggests to the authors “that the choice of drugs an individual tends to use depends heavily on which drugs were popular at the time he or she came of age”. This, claim the authors, is reinforced by data that show “relatively few individuals born outside of the ‘heroin injection generation’ used [sic] heroin, especially by injection” (Johnson et al 2002). Observations of heroin use among a defined cohort of young African American males further emphasizes the role of prevailing social norms. Evidence of heroin use among this group was scarce despite the existence of a number of environmental factors that are typically understood to increase risk: 1) parents, relatives or neighbors who regularly used or injected heroin; 2) easy availability of heroin; 3) higher potency heroin; 4) routine attempt to entice new customers by mixing heroin with cocaine or marijuana; 5) some non-heroin using youth engaged in heroin sales (Johnson et al 2002).

These studies present “substance use in adolescents...as a social behavior that is developed and maintained in deviant peer reference groups” (Tang et al 1996). Attraction to a subculture and that

subculture's norms regarding heroin use was noted in several qualitative studies of heroin users. According to these authors, these norms are partly transmitted through entertainment media that depict heroin use. The authors describe media as both influencing and being influenced by youth behavior (Duterte et al 2003, Lalander 2002). Heroin use is further characterized as the active pursuit of pleasure, status and belonging versus a passive response to individual or environmental stress (Duterte et al 2003, Lalander 2002, Pearson 1987, Johnson et al 2002). "To be accepted and all of those things were kind of rolled up into one when I was going into 8th grade. All of a sudden, like I could be one of the cooler, cooler people, like the rebel but still be in my whole familiar territory of the outcasts." (Duterte et al 2003)

### Use of Alcohol, Tobacco and Other Drugs

A second frequently discussed phenomenon is the relationship between heroin use and previous use of alcohol, tobacco and other drugs. Four studies cited findings that associated heroin use with the previous use of other substances (Stenbacka et al 1993, Golub et al 1994, Kane et al 1999). Greater polysubstance use was also identified among heroin users in comparison to users of other substances (Hopfer et al 2000) and in association with injection of a drug (Roy et al 2003, Gordon 2002, Stenbacka et al 1993). Early initiation of use was associated with heroin use in at least two of the studies reviewed (Golub et al 2001, SAMSHA 2002).

Inhalant use has long been associated with the use of other drugs. In a range of studies, inhalant use was associated with increased odds of heroin and/or injection drug use; participants were five to twelve times more likely to use heroin or inject drugs than those who had not used inhalants (Bennett et al 2000)

An additional study that included marijuana use showed that early inhalant users were eight times more likely to use opiates than early marijuana users, who in turn were approximately two times more likely to use opiates than non-early inhalant/early marijuana users (Bennett et al 2000). Inhalant use was also associated with risk of later heroin use among Swedish army conscriptees (Stenbacka et al 1993). Frequent or early marijuana use had the most significant association with heroin or other "hard drug" use among alcohol, tobacco and marijuana in three studies (Stenbacka et al 1993, Golub et al 1994, Kale et al 1999).

Only one set of researchers proposed a link between OxyContin and other opiate-based prescription drugs and heroin. In interviews with recent heroin users as part of the Ohio Substance Abuse Monitoring (OSAM) Network, five of the ten interviewees reported abuse of prescription opioids, tolerance, and withdrawal symptoms when deprived of drugs. They also reported that heroin was less expensive and more available, and that they would not have tried heroin had

they not become addicted to OxyContin. This led the researchers to suggest in a letter to *American Family Physician* that, while no causal link can be made, prescription opioids constitute a new route to heroin use. (Siegal et al 2003) The authors cited Community Epidemiological Work Group identified relationships between initial Oxycontin abuse and subsequent heroin abuse in Boston and non-metropolitan counties surrounding Atlanta, Georgia.

Most studies did not show that one occurrence caused a second one to occur (casual relationship). However, one study attempted this through the use of causal models. These models examined the relationship of age of first alcohol use, first marijuana use, and hard drug use among Philadelphia arrestees. Results suggested the importance of marijuana as the key escalation drug to hard drug use (heroin, cocaine, crack). This pathway was less clear for "alternate" hard drugs such as methamphetamines, hallucinogens and Ecstasy. The difficulty of predicting drug escalation using the causal model, given the rarity of this event within the sample, and sampling limitations were cited by the authors as contributing to concerns about the external validity of their findings (Kane et al 1999).

Finally, in their analysis of NHSDA data from over an 18-year period, two researchers found substantial variation in rates of progression from alcohol, tobacco and marijuana to hard drugs. This was generally true even when taking into account differences in race/ethnicity and sex. The substantial differences among people of different generations led the researchers to conclude that there is at least one way in which the gateway theory is an unreliable foundation for drug abuse prevention and policy.

*"The gateway phenomenon reflects norms prevailing among youth at a specific place and time... linkages between stages are far from causal.... simply restricting youth's access to gateway drugs will not necessarily reduce subsequent hard drug abuse."*

The authors propose that prevention programs focus on understanding and addressing social norms, which they believe are more significant determinants of hard drug use. Citing analysis that contends that "substance use is only one behavior caused by and contributing to problems in adolescence," they suggest that prevention be based on continued observation of the context in which youth substance use occurs (Golub et al 2001, Johnson et al 2002).

### Race/Ethnicity and Gender

Gender differences were identified in relation to family influence, susceptibility to peer pressure, sensation seeking, school and neighborhood influence, and outcome expectations/perceived risk. However, the impact of gender on these factors was not always consistent. For example, one study found girls to be more susceptible to

peer pressure (Tang et al 1996) while another attributed the same to boys (Sale et al 2003). Apparently contradictory findings also emerged regarding sensation seeking (greater for girls, Tang et al 1996) and risky attitudes (greater for boys, Musher-Eizenman 2003). Two exceptions were influence of family (greater for girls in both Sale et al 2003 and Tang et al 1996) and greater exposure/opportunity among boys than girls (Van Etten et al 1999 and Tang et al 1996).

Findings regarding race/ethnicity were also inconsistent. In a study of initial drug opportunities and transitions to first use, Whites were found to be significantly less likely to transition to heroin than all other race categories (Van Etten 1999). However, when the same data was examined to include cocaine and crack, Blacks were found to be slightly less likely to use “hard drugs” than Whites (Golub et al 2001). In an analysis of the perceived risks and alcohol, tobacco and illicit drug use of selected ethnic groups, lifetime heroin use was found to be greater for Blacks than for Whites or Hispanics. Whites were less likely to report perceived risk relating to various drug abuses than Blacks and Hispanics (Xueqin et al 2000).

All authors called for increased research to better understand the effect of gender and race/ethnicity on the use of heroin and other substances. This includes questions regarding the underlying causes of perceived differences. For example, how do patterns of family management (e.g. greater discipline of girl vs. boy children) or social behaviors (boys more likely to engage in outdoor/public activities) impact access to drugs, perceptions of risk, etc. (Van Etten et al 1999, Tang et al 1996)? Findings regarding questions like these could be used to illuminate mechanisms for design of early prevention programs (Van Etten et al 1999).

## Part Three-Findings Relating to Prevention Programs

Twenty-seven articles addressing ten prevention programs were identified and reviewed. Two specifically addressed adolescent heroin use while the remaining eight focused more broadly on the prevention of alcohol, tobacco, and illicit drug use, primarily marijuana. In addition, two articles that addressed school-based substance abuse prevention curricula and two articles that surveyed available research on an array of community-based programs were included.

### Heroin Prevention Programs

The search of current prevention literature yielded information on only two programs that specifically addressed heroin use among adolescents. These are the Addiction Prevention Pilot Project in Trofaiach, Austria and The Prevention Program of the Municipal Youth Schools in Denmark.

Both programs were created in response to a growing number of adolescents who used heroin. Trofaiach, Austria is a small industrial city of 8700 people that had recently experienced a significant economic downturn as the result of the loss of its main industry. The city experienced seven heroin-related deaths of young people over a year-and-a-half long period. In response, a strategic planning group was formed that included local government, community members, educators, religious organizations, health care providers, social service agencies, and representatives from the criminal justice system. The strategic group sought to change youth drinking and heroin use behavior through: 1) providing youth development activities in and outside of school structured on the basis of social learning theory; and 2) through the stabilization and support for addicted persons and improvement of their social/community relationship through counseling and support services. Program objectives and strategies were developed using input from a community forum, key informant

interviews and literature/epidemiological information. Program activities including providing a youth center, school-based workshops, a peer education program, and counseling and case management services for drug and alcohol users.

Program achievements were evaluated using key informant interviews and observations of key participants. Internal and external evaluators were employed with external and other support provided by the Institut für Erziehungswissenschaften Universität Graz. Evaluation sought to identify process, outcome and impact achievements.

The Trofaiach strategic group identified positive gains in participation in the strategic group and member experiences of satisfaction with the program. It also reported an increase in youth development activities. Evaluators estimated that 95-100% of Trofaiach youth had had some form of contact with the program. The impact of these activities on heroin use and drinking is not statistically demonstrated. Anecdotal observations included a decreased visibility of heroin trafficking and reports of decreased drinking and heroin use. A concurrent increase in the use of ecstasy was reported. Neither the source nor the significance of these effects is discussed (EDDRA 1996-1998).



In contrast, the Prevention Program of the Municipal Youth Schools in Denmark was a national initiative, launched in 28 Youth Schools as part of a process of cooperation between the Youth Schools' Development Center, the schools, the National Board of Health, and the advertising agency "COURAGE". The program's objective was to provide information about the dangers of smoking heroin through the creation of theatre performances and rock musicals at the schools. The project also sought to develop new prevention models and methods for the work of prevention. The project consisted of three elements: 1) training and networking; 2) local practical activities at 28 Youth Schools; 3) a campaign designed to increase awareness with the slogan: "Smoking heroin sucks the life out of you."

An evaluation was conducted using interviews with school staff, a survey, group and in-depth interviews, and case studies. Evaluation measures were: 1) factual knowledge achieved; 2) the extent to which the campaign created dialogue; 3) development of new prevention methods; and 4) staff training.

Sixty-five percent of the target group saw prevention material and understood the message. The campaign was found to consolidate the attitudes of those who were critical of drugs but did not change the attitudes of those in the identified risk groups. Evidence of some new knowledge among local staff of drug prevention was found, but "it is doubtful if any systematized development of new competence has been gained among the local staff at the youth schools as a whole." Concerning the development of new preventive methods, evaluation found no development of new methods as a result of the "common-activities" (activities planned to cross-fertilize experiences gained from the selected schools involved). A positive impact on peer educators was achieved but the specific impact was not discussed. The evaluation was not able to assess whether activities had any preventive impact beyond with those individuals directly engaged implementing activities.

Program staff and evaluators noted that activities/methods varied among participating schools. They believed this was in part due to an emphasis on local planning and conflict between local participants and the steering committee. Program directors noted a heavy focus by local staff on their own activities in contrast to mutual learning/sharing. The goal of increasing the ability of programs to view own efforts within larger context was said to have failed (EDDRA 2001).

## Community Substance Abuse Prevention Coalitions

In addition to the two heroin-prevention programs, eight community-based alcohol or other substance abuse prevention programs were reviewed in order to shed additional light on the potential and impact-to-date of community substance abuse prevention coalitions. Each of the eight programs used a coalition model to address community-wide, environmental factors associated with adolescent and/or young adult substance abuse. The majority of coalitions included representatives from local government, education, health care, social services, community members, and police/the criminal justice system. Representation from religious organizations, treatment providers, and consumers of substance abuse services was also included, though less commonly, across programs.

Coalition activities included policy initiatives, substance use education, communication about substance abuse and the associated dangers and risks collaboration and enforcement of regulatory policies and laws regarding substance use. All but one reviewed program included activities in at least three of these areas. Specific strategies included, among others:

- ▀ **Citizen citations to merchants who sell alcohol and/or tobacco to minors (Fawcett et al 1997, Lewis et al 1996)**
- ▀ **Intensive family-based case management (CASA 2002)**
- ▀ **An academic mentoring program (Aguirre-Molina et al 1995)**
- ▀ **Parent support groups (Aguirre-Molina et al 1995)**

- **School-based social influence prevention programming (Mansergh et al 1996, Pentz et al 1996, Pentz 1996)**
- **Implementation of a school alcohol, tobacco and drug policy (Aguirre-Molina et al 1995)**
- **Educational materials and community awareness campaigns (Mansergh et al 1996, Pentz et al 1996, Pentz 1996)**

Each of the eight programs included an evaluation program, with all but one examining the impact of program activities on substance use and associated harms. Four evaluations included process measures and six included outcomes such as increased community awareness or decline in alcohol or cigarette sales to minors. The majority of evaluations were quasi-experimental, comparing program sites to similar neighborhoods or cities. Measures varied across programs. Evaluation tools varied and included surveys, in-depth interviews, reports, and statewide data on substance use.

Overall, findings were mixed regarding the impact of coalition activities on community rates of adolescent tobacco, alcohol, or drug use. Three of the seven programs that evaluated the impact of the program on substance use found no effect (Aguirre-Molina et al 1995, Cheadle et al 2000, Wielawski 2002). Of the remaining four, positive results were achieved in relation to decreased rates of substance use including alcohol, marijuana, cocaine, amphetamines, and tobacco. Secondary effects for baseline users were identified for one primary prevention program (Chou et al 1998). Rate of single-nighttime vehicle crashes and drug trafficking (Fawcett et al 1997), and violent crime (CASA 2002) were reduced. Eighteen to twenty-year-olds in Communities Mobilizing for Change on Alcohol (CMCA) areas reduced their propensity to provide alcohol to other teens and were less likely to consume alcohol than those in comparison communities (Wagenaar et al 2000).

Positive and negative findings are constrained by methodological limitations that include; difficulty isolating the effect of various program components, (Mansergh et al 1996, Hallfors et al 2002, Pentz 1996, Fawcett et al 1997, Skaraet al 2003); difficulty identifying and questionable validity of comparison communities (Fawcett et al 1997);

concerns that effects are too small/isolated to be detected using population level data (Cheadle et al 2000); and difficulty measuring effects that may not occur for many years (Fawcett et al 1997).

Positive process and outcome-related effects were more consistently reported across programs. Almost all of the programs reported positive effects such as increased rates of community action, increased changes in programs and policies regarding substance abuse, progress toward coalition goals, and greater community awareness. Based on combined outcome and impact findings, one researcher suggests that community change may be an important intermediate outcome and early predictor of eventual coalition impact (Fawcett et al 1997).

### **In Depth—The Fighting Back Program**

In the late 1980's the Robert Wood Johnson Foundation (RWJF) funded 15 communities to implement a variety of anti-drug strategies to address drug problems. Communities took a community-wide approach to substance abuse prevention, involving the participation of business, health care, the public school system, local government and its agencies, the police, community groups, local media, and the clergy.

Operating on the assumption that substance abuse is influenced by physical and social environments, the program focused on changing the environments that promote and sustain demand (Saxe et al 1997). Program initiatives fell into three broad categories: (1) *Environmental Strategies*, which included local efforts designed to affect the physical and social environments that promote alcohol and drug use; (2) *Individual Strategies*, designed to strengthen individuals (both users and non-users) to resist and recover from alcohol and drug use; and (3) *Supply, Cost, and Availability Strategies*, which include primarily, public policy efforts designed to affect the availability, accessibility, and costs associated with alcohol and drug use.

Fighting Back became the nation's largest privately funded initiative to reduce and prevent substance abuse through community-based efforts. It served as the model for the federally funded community partnership demonstration grant program (Wielawski 2002).

Five years into the program, the RWJF launched a multi-method, quasi-experimental, longitudinal evaluation. Collecting both qualitative and quantitative data, the evaluators used telephone surveys, in-depth interviews and document reviews, a customized Management Information System (MIS), and community level indicators such as traffic accident rates and criminal activity. Evaluators sought to determine if Fighting Back communities were able to achieve measurable reduction in the overall use of or demand for alcohol and/or illegal drugs. Program sites were compared to multiple non-funded communities (Wielawski 2002, Saxe et al 1997).

Preliminary findings were controversial. Researchers found that the data provide tentative support for key environmental assumptions of the program. However, in terms of impact on substance use, the programs were found to produce no significant effects in comparison to non-program sites (Saxe et al 1997). These findings led the RWJF to conclude that the evaluation may offer hope that something can be done through coalitions but that “community coalitions alone are *not a sufficient solution* to the substance abuse problem” (Wielawski 2002). Modest gains were identified in individual coalitions but were not included due to various methodological limitations (Wielawski 2002).

Further analysis of the data was done in order to explore the effect of different types of activities, the intensity of the programs, and more vs. less comprehensive strategies. This was done creating categories for program strategies and correlating strategy dose with corresponding outcomes (Hallfors et al 2002). The findings from this study supported previous findings and even identified some instances in which the program may have had a harmful effect. It also helped researchers understand better why programs didn’t seem to be working and what might help coalitions work better in the future. The four main findings of the study were:

- 1. Effects related to community and youth goals were null.**
- 2. Communities using strategies targeting adults did worse on related indicators over time than matched control communities.**
- 3. More comprehensive strategies did not show greater benefit.**
- 4. Higher dose communities produced an inverse relationship with desired outcomes.**

Researchers and others noted methodological limitations to the evaluation, including well-documented difficulties quantifying community based coalition activities and outcomes, small sample size, difficulties achieving equivalence in quasi-experimental design evaluations, and, for the latter stage evaluation, measurement of strategies that were limited to dose and not quality (Hallfors et al 2002).

Several possible explanations for these results were theorized by evaluators and program staff. (Saxe et al 1997, Wielawski 2002, Hallfors et al 2002):

- 1. The influx of money/new strategies may have undermined existing programs, raised new conflicts or attracted unhelpful players.**
- 2. Ineffective programs may have been adopted for political or expediency reasons.**
- 3. Coalition formation and maintenance may require a degree of effort that outweighs their effect.**

4. **Certain strategies may require more concentrated or efficient leadership than is generally observed in coalitions.**
5. **Institutions targeted by the program may have found little individual benefit in program goals.**
6. **It is difficult to build consensus around controversial substance abuse issues including approaches to treatment, harm reduction, and approaches to licit vs. illicit substances.**
7. **It can be challenging to build consensus where communities experience race and class divisions and/or divisions between representatives of different neighborhoods, particularly in cases where coalition members experience outward manifestations of drug abuse (such as crime) very differently.**

Following the evaluation, the Fighting Back National Program Office worked with the grantees to gather information about the lessons of Fighting Back. Three areas of broad interest were identified: how Fighting Back affected individual lives, whether it changed community systems, and if it created a community capacity to address the substance abuse problem. Based on this feedback, the Lessons Learned Project focused on three major components: Inspirational Individuals, Unique Programs, and Multi-site case study.

Three conferences were sponsored to explore the lessons learned in Fighting Back. The conferences focused on three areas: Affecting Health Care, Strengthening Civic Infrastructure and Influencing Race Relations. The conferences offered these lessons learned:

- ▶ **A common cause can bring diverse groups together.**
  - ▶ **Community residents and institutional leaders should be participants of equal stature.**
  - ▶ **Local government can be instrumental in facilitating constructive community efforts.**
  - ▶ **Strategy, community accountability and leadership are crucial.**
- Conference reports may be valuable resources for communities working on issues of race, civic infrastructure development, and/or changes to the healthcare system. They are available at the Join Together website ([www.jointogether.org](http://www.jointogether.org)).
- Case Study: Midwestern Prevention Project (Pentz 1996, Pentz et al 1996, Mansergh et al 1996)**
- The Midwestern Prevention Program (MPP) is a comprehensive substance abuse prevention program implemented in four midwestern communities. Programs targeted avoidance and reduction of drug use. Special emphasis was placed on prevention of cigarette, alcohol, and marijuana use in middle/junior high school. The program consisted of five components: (1) mass media coverage, promotional videotapes, and commercials about each program component; (2) an 11- to 13-session in-school program with six homework sessions with parents followed by a five-session booster school program with three homework sessions; (3) a parent organization program involving parent-principal meetings and parent-child communications training; (4) a community organization program to organize and train community leaders to develop action groups; and (5) drug use policy change initiatives. Based on diffusion of innovation and other mass communication theories, components were introduced into communities at the rate of six months to one year apart.
- A longitudinal evaluation comparing intervention and delayed intervention sites in each program city produced the following findings:
- ▶ **Effects of the community-based program on cigarette, alcohol, and marijuana use were maintained *beyond the end of high school* and into early adulthood.**
  - ▶ **Similar to comprehensive school programs involving many sessions and boosters, the MPP showed average *decreases of 8 to 15 percent in cigarette and marijuana use*, or a 20 to 40% net program effect, for the three years associated with program participation by students.**

- ▶ **Beyond the three-year mark, the MPP showed *greater and more sustained effects on heavier use rates* than those reported by school or other single channel programs, including an average reduction of four percent in daily cigarette use, monthly drunkenness, and heavy (two or more times in the preceding week) marijuana use two or more times in the preceding week.**
- ▶ **Beyond the end of high school, effects have emerged on the use of some stimulant classes of drugs, including *amphetamines and cocaine*, but *not on depressants*.**

Program researchers have suggested that the Midwestern Prevention Project has demonstrated, among others:

- ▶ **School plus community programming is better than school programming alone**
- ▶ **Joint demand and supply reduction strategies might be appropriate for tobacco and alcohol, but there is little research bearing on whether they fit well for illicit drugs**
- ▶ **Integrated programs should be staggered to avoid draining on community resources and to maintain interest**

## THE COMMUNITY PARTNERSHIP PROGRAM, 1990-96 LESSONS LEARNED

### Taken from *Assessing Community Coalitions, Drug Strategies (1998)*.

The 48-Community Study tracked and evaluated the outcomes of select SAMHSA/CSAP funded Community Partnerships designed to decrease substance abuse by improving conditions in the community environment. The study randomly selected a group of 24 partnerships from the total of 251 and identified 24 nonpartnership communities that matched the partnership communities on the basis of demographic similarities. The evaluation found that community partnerships can be effective in decreasing alcohol and illicit drug use in males, but were not effective in decreasing alcohol and illicit drug use in females.

Based on evaluation findings, evaluators suggested the following “lessons” for community coalitions:

1. Address early organizational challenges such as how the partnership, its board, and its fiscal agent interpret and divide their responsibilities for important functions such as the hiring and firing of staff or deciding on strategic directions for substance abuse prevention.
2. Partnerships need to be inclusive.
3. Prevention efforts need to include the workplace (which is also part of the community).
4. Empower residents by decentralizing to neighborhood or local groups.
5. Overcome initial barriers to partnering by ensuring that all interests are represented and addressed.
6. Recognize that changes in local policies represent a form of institutional change.
7. Coordinate what's already in place.
8. Substance abuse prevention is linked to community development.
9. It is important to raise community-wide awareness.
10. Anticipate later challenges.

## **Prevention of Substance Abuse Approaches Related to Medical and Educational Professionals and Environmental Strategies to Reduce the Sale of Illicit Drugs**

Additional opportunities for collaboration are presented by Hallfors et al (2002). The author makes several specific recommendations for increasing participation of medical and educational professionals and staff in identifying children at risk for substance use. Barriers to clinical screening and prevention practice are identified, including lack of knowledge, skill and confidence; financial disincentives; lack of follow up services and resource information; and the lack of tested screening tools. The authors suggest policy and practice changes that include the development of a systematized screening protocol, clinician reminders, outreach visits to clinicians by peers, and the inclusion of substance abuse screening as part of HMO protocols for physicians as well as other quality standards that promote institutional change.

An overview of environmental strategies to reduce the sale of illicit drugs (Davis 1998) emphasizes community-level actions. These include the arrest and removal of drug dealers, citizen surveillance programs, civil remedies (for example, property seizures, legal action against landlords who own property on which drugs are sold), and changes to the physical environment such as fences that block alleyways and additional streetlights. With the exception of alterations to the physical environment (that while not yet tested for its impact on the drug market, has been shown to deter forms of economic and personal crime), each of these strategies has been shown to have a positive effect on reducing drug sales, dislocating retail drug markets and reducing outdoor drug transactions. Each carries the potential negative effects of overtaxing the criminal justice system, displacing dealing to other less active nearby neighborhoods, and abuse by authorities.

## Part Four—Implications

Implications of the literature reviewed include: questions regarding the generalizability of information regarding substance abuse across substances and populations with respect to gender and race/ethnicity and other demographic variables; questions regarding the generalizability of prevention programming across substances and populations; and recommendations for additional research.

### Questions for Heroin Prevention Programs

Only two programs were found that contained objectives or evaluation measures specific to the prevention of heroin use. In several instances, the omission of heroin from evaluation results was due to the extremely small number of subjects reporting heroin use at baseline, follow-up, or among comparison groups (Bennett et al 2000, Skara et al 2003). Numbers this small made the results too unreliable for inclusion in these studies. Relatively small numbers of heroin users within the general adolescent population may also be one of the reasons that few programs could be found that specifically included heroin in their prevention objectives. Programs may have chosen to focus on the more commonly used substances alcohol, tobacco and marijuana. Programs may also have addressed heroin as part of a broader category of “other”, “illicit” or “hard” drugs. Research indicates that users of heroin and other hard drugs usually use “gateway” substances such as inhalants, alcohol, tobacco and marijuana first. This may lead some program developers to address the prevention of heroin use later in life by preventing use of these substances at an earlier age.

The current lack of heroin-specific program literature raises two related questions for heroin prevention:

1) Do strategies that effectively prevent use of alcohol, tobacco and marijuana also work for heroin? 2) Is preventing the use of “gateway” drugs an effective way to prevent heroin use?

One study that examined long-term follow-up data from a large-scale randomized prevention trial showed that a school-based cognitive-behavioral skills training prevention program reduced illicit drug use, including heroin. These results suggest that targeting alcohol, tobacco and marijuana through a universal prevention program can reduce illicit drug use (Botvin et al 2000).

Further answers to these questions may depend on the extent to which heroin and heroin users are or are not like other substance users. Some researchers have cautioned against the generalizability of various substance abuse strategies across substances. Research that questions the reliability of the gateway theory as a guide for prevention policy (Golub et al 2001), the vastly greater numbers of adolescents who used alcohol and cigarettes that progress to marijuana than to heroin (Van Etten et al 1999), and numerous chemical, physiological, and social normative difference between heroin and other illicit drugs not discussed in this review, may need to be addressed before one could with confidence wholly apply the lessons learned in the broader arena of adolescent substance abuse prevention.

Although a greater body of literature that discusses heroin use (vs. heroin prevention) was found, there are still relatively few studies that have looked at the characteristics of adolescent heroin use (Hopfer et al 2000). Literature on risk factors generally has not yet identified causal pathways, only diverse and highly individual groupings of associated risk. Ultimately, the lack of studies that specifically examine the effect of school and community-based substance abuse prevention on heroin use means this review can provide little scientific data on effective heroin prevention.

Similarly, diverse findings relating to the efficacy of coalition-based substance abuse prevention programs do not provide any easy answers.

### **Clues for Future Prevention Programming**

What the literature does provide is further evidence as to the multifaceted nature of heroin use and prevention programming, as well as some clues to directions communities might take in addressing adolescent heroin use. These clues include:

- ▮ **Risk factors that are frequently associated with heroin use include peer use and norms, low-connectivity to school and family, and individual psychological/social issues that may be expressed by problem behaviors such as delinquency, running away, and the early and frequent use of alcohol, tobacco, inhalants, marijuana and other drugs.**
- ▮ **Epidemiological/trend evidence points to social and conduct norms and cultural and social change as catalysts for heroin use among certain social groups.**
- ▮ **Lessons learned from community substance abuse prevention coalition evaluations include the importance of: staging coalition-building and program activities to avoid strain on resources and maintain interest; building consensus and developing leadership and processes that work among diverse interests and groups; and ensuring that program objectives and activities “fit” the coalition format.**

### **Recommendations for Future Research**

Finally, a number of future prevention-research questions are posed in the literature. These include the need for a greater understanding of: (Jansen et al 1996, Van Etten et al 1999, Xueqin et al 2000)

- ▮ **the relationship between the use of alcohol, tobacco, marijuana, inhalants and heroin and injection use**
- ▮ **the factors that are associated with the decision to use heroin once the drug is available in comparison to the decision to use marijuana**
- ▮ **mediating variables including race/ethnicity and gender**
- ▮ **appropriate developmental stages for prevention interventions and appropriate sequencing of interventions**
- ▮ **how to maintain positive effects over time**
- ▮ **how local indicators affect health behaviors/substance use**
- ▮ **the extent to which prevention strategies are generalizable across substances**
- ▮ **community/environmental intervention that attempt to isolate the effect-specific components of a prevention program**
- ▮ **segments of the community that are critical to coalition success, and whether it is necessary to engage all segments of the community**



## Conclusion

A review of current literature relating to prevention and use of heroin among adolescents yielded important clues regarding effective heroin prevention, but did not produce significant data regarding program strategies. Significant findings include:

1. **Adolescent heroin users share many characteristics with adolescent users of other substances. These include risk factors relating to family, peers, community, environment and individual psychosocial characteristics and behaviors. Information on specific characteristics of adolescent heroin users is limited. Social and peer norms and prior substance use seem to have the most potential effect on youthful heroin use. Connectedness to family and school, as well as self-control, were seen as crucial “pathways of influence” to general substance use decisions. The importance of “parental supervision, development of strong connections between youth and family, peers and schools” were highlighted. Differences have been suggested regarding polysubstance dependency as well as gender and race/ethnicity differences in use of different substances. Unique characteristics may need to be further identified and taken into account when designing heroin prevention programming.**
2. **There is limited data on effective strategies for heroin prevention. Two heroin prevention programs were unable to demonstrate significant impact on community heroin use in their evaluations. One study demonstrated effectiveness of a school-based cognitive-behavioral skills training program in reducing illicit drug use, including heroin. Additional data on the impact of universal substance abuse prevention programs on heroin was not found, although some impacted other drugs that often precede heroin use.**
3. **Community coalitions can be effective agents for positive community outcomes including strengthening communication and collaboration and increasing awareness of treatment and other services. Findings regarding the impact of community coalitions on adolescent substance use are mixed. Half of the programs reviewed showed no effect. Positive and negative findings are constrained by methodological limitations. These include difficulty isolating the effect of specific program components and difficulty comparing findings across studies due to different evaluation methods and measures. Coalitions could potentially focus on decreasing risk factors and increasing the protection factors that affect youths’ substance use decisions. Social norms could be addressed on a societal, community, and individual level. Further research could look at the effectiveness of this comprehensive approach.**

## Citations

1. Agar, Michael, Schacht Reisinger, Heather. (2001) Open Marginality: Heroin Epidemics in Different Groups. *J Drug Issues* 31(3)
2. Aguirre-Molina, Marilyn, Gorman, D.M. (1995) The Perth Amboy Community Partnership for Youth: Assessing its effects at the environmental and individual levels of analysis. *Int'l Q of Comm Health Ed* 15(4)
3. Bennett, Melanie E., Walters, Scott T., Miller, Joseph H. (2000) Relationship of Early Inhalant Use to Substance Use in College Students. *J. of Substance Abuse* 12:3
4. Botvin, Gilbert J., Griffin, Kenneth W., Diaz, Tracy, Scheier, Lawrence M., Williams, Christopher, Epstein, Jennifer A. (2000) Preventing Illicit Drug Use in Adolescents: Long Term Follow Up Data From A Randomized Control Trial of A School Population. *Addictive Behaviors* 25 (5)
5. Caulkins, Jonathan P (2001) Drug Prices and Emergency Departments Mentions of Cocaine and Heroin. *Am J Public Health* 91:9
6. Cheadle, Allen, Wagner, Edward, Walls, Mary, Dierhr, Paula, Bell, Michelle, Anderman, Carolyn, McBride, Colleen, Catalano, Richard F., Pettigrew, Eric, Simmons, Rhonda, Neckerman, Holly. (2000) The Effect of Neighborhood Based Community Organizing Results from the Seattle Minority Youth Health Project. *Health Services Research* 36 (4)
7. Chou, Chih-Ping, Montgomery, Susanne, Pentz, Mary Ann, Rohrbach, Louise A., Johnson, C. Anderson, Flay, Brian, MacKinnon, David P. (1998) Effects of a Community Based Prevention Program on Decreasing Drug Use in High Risk Adolescents *Am J Public Health* 88 (6)
8. Crum, Rosa M., Lillie-Blanton, Marsha, Anthony, James C. (1996) Neighborhood Environment and Opportunity to Use Cocaine and Other Drugs in Late Childhood and Early Adolescence. *Drug and Alcohol Dependence* 43
9. Davis, Robert C. (1998) *Curbing the Sale of Illicit Drugs Through Environmental Strategies*
10. Drug Strategies (1998). *Assessing Community Coalitions*
11. Duterte, Micheline, Hemphill, Kristin, Murphy, Terrence, Murphy, Sheigla. (2003) Tragic Beauties: Heroin Images and Heroin Users. *Contemporary Drug Problems* 30
12. Exchange on Drug Demand Reduction Action (EDDRA) (2001) A Prevention Initiative Against Smoking Heroin. The Prevention Programme Of The Municipal Youth Schools: Youth And Abuse. *Program Summary. European Monitoring Center for Drugs and Drug Addiction*
13. EDDRA (1996-1998) Addiction Prevention in Trofaia: A Pilot Project. *Program Summary*
14. Factor, Stephanie, Wu, Yingfeng, Monserrate, Joan, Edwards, Vincent, Cuevas, Yvonne, Del Vecchio, Sandra, Vlahov, David. (2002) Drug Use Frequency Among Street Recruited Heroin and Cocaine Users in Harlem and the Bronx Before and After Sept. 11, 2001. *J Urban Health* 79(3)
15. Fawcett, Stephen B., Lewis, Rhonda K., Paine-Andrews, Adrienne, Francisco, Vincent T., Richter, Kimber P., Williams, Ella L., Copple, Barbara. (1997) Evaluating Community Coalitions for Prevention of Substance Abuse: The Case of Project Freedom. *Health Ed and Beh* 24(6)
16. Flom, Peter L., Friedman, Samuel R., Kottiri, Benny J., Neaigus, Alan, Curtis, Richard. (2001) Recalled Adolescent Peer Norms Toward Drug Use in Young Adulthood in a Low-income, Minority Urban Neighborhood. *J Drug Issues* 31(2)
17. Fuller, Crystal M., Vlahov, David, Ompad, Danielle C., Shah, Nina, Arria, Amelia, Strathdee, Staffanie A. (2002) High Risk Behaviors Associated with Transition from Illicit Non-injection to Injection Drug Use Among Adolescent and Young Adult Drug Users: A Case Controlled Study. *Drug and Alcohol Dependence* 6
18. Golub, Andrew, Johnson, Bruce D. (2001) Variations in Youthful Risks of Progression From Alcohol and Tobacco to Marijuana and to Hard Drugs across Generations. *Am J Pub Health* 91(2)

19. Golub, A., Johnson B.D. (1994) The Shifting Importance of Alcohol and Marijuana as Gateway Substances Among Serious Drug Abusers. *J Stud Alcohol*.
20. Gordon, Susan M. (2002) Surprising Data on Young Heroin Users. *Brown University Child and Adolescent Behavior Letter, also Behavioral Healthcare Tomorrow Special Report, Adolescent Substance Abuse SR28-30*
21. Hallfors, Denise, Van Dorn, Richard A. (2002) Strengthening the Role of Two Key Institutions in the Prevention of Adolescent Substance Abuse *J Adol Health* 30 (1)
22. Hallfors, Denise, Cho, Hyunsan, Livert, David, Kadushin, Charles. (2002) Fighting Back Against Substance Abuse, Are Community Coalitions Winning? *Am J Prev Med* 23 (4)
23. Hawkins, J. David, Catalano, Richard F., Miller, Janet Y (1992) Risk and Protective Factors for Alcohol and Other Drug Problems in Adolescence and Early Adulthood: Implications for Substance Abuse Prevention. *Psych Bull* 112 (1)
24. Hopfer, Christian J., Mikulich, Susan K., Crowley, Thomas J. (2000) Heroin Use Among Adolescents in Treatment for Substance Use Disorders. *J. Acad. Amer Child Adolesc. Psychiatry*, 39:10
25. Jansen, Mary A., Glynn, Thomas, Howard, Jan. (1996) Prevention of Alcohol, Tobacco and Other drug Use. *American Behavioral Scientist* 39 (7)
26. Johnson, Bruce D., Golub, Andrew. (2002) Generational Trends in Heroin Use and Injection in New York City. In David F. Musto, *One Hundred Years of Heroin*. Westport CT: Auburn House
27. Johnson, Bruce D., Thomas, George, Golub, Andrew. (1998) Trends in Heroin Use Among Manhattan Arrestees From the Heroin and Crack Eras. In Inciardi, JA, and Harrison, LD eds. *Heroin in the Age of Crack Cocaine* Thousand Oaks, CA: Sage
28. Kane, Robert J., Yacoubian Jr. George S. (1999) Patterns of Drug Escalation Among Philadelphia Arrestees: An Assessment of the Gateway Theory. *J Drug Issues* 29(1)
29. Lalander, Philip. (2002) Who Directs Whom? Films and Reality for Young Heroin Users in a Swedish Town. *Contemporary Drug Problems* 29
30. Lewis, Rhonda K, Paine-Andrews, Adrienne, Fawcett, Stephen B., Francisco, Vincent T., Richter, Kimber P., Copple, Barbara, Copple, James E. (1996) Evaluating the Effects of a Community Coalition's Efforts to Reduce Illegal Sales of Alcohol and Tobacco Products to Minors. *J Comm Health* 21 (6)
31. Manganiello, James A. (1978) Opiate Addiction: A Study Identifying Three Systematically Related Psychological Correlates. *Intl J of the Addictions* 13(5)
32. Mansergh, Gordon, Rohrback, Louise Ann., Montgomery, Susanne B., Pentz, Mary Ann, Johnson, C. Anderson. (1996) Process Evaluation of Community Coalitions for Alcohol and Other Drug Abuse Prevention: A Case Study Comparison of Researcher and Community Initiated Models. *J Community Psychology* 24
33. Millar, T., Craine, N., Carnwath, T., Donmall, M., (2001) The Dynamics of Heroin Use; Implications for Intervention. *J Epid Comm Health* 55 (12)
34. Massachusetts Department of Public Health, Bureau of Substance Abuse Prevention (2004) *Massachusetts Heroin and Other Opioids Comprehensive Environmental Planning and Implementation Grants*
35. Massachusetts Department of Public Health (2002) *Maximizing Health: A Framework*. Massachusetts Substance Abuse Prevention Framework.
36. Musher-Eizenman, Dara R., Holub, Shayla C., Arnett, Mitzi (2003) Attitude and Peer Influences on Adolescent Substance Use: The Moderating Effect of Age, Sex and Substance. *J Drug Educ* 33(1)
37. National Center on Addiction and Substance Abuse at Columbia University (2002). *Center Report on the CasaSTART Program*.
38. Noell, John W., Ochs, Linda M. (2001) Relationship of Sexual Orientation to Substance Use, Suicidal Ideation, Suicide Attempts, and Other Factors in a Population of Homeless Adolescents. *J Adol Health* 29
39. Pearson (1987) in Dorn, Nicholas, South, Nigel, Eds. *A Land fit for heroin?: Drug Policies, Prevention, and Practice*. New York : St. Martin's Press

40. Pentz, Mary Ann. (1996) Preventing Drug Abuse Through the Community: Multi-component Programs Make the Difference. *National Conference on Drug Abuse Prevention Research: Presentations, Papers, and Recommendations Sept. 1996*
41. Pentz, Mary Ann, Bonnie, Richard J., Shopland, Donald R. (1996) Integrating Supply and Demand Reduction Strategies for Drug Abuse Prevention. *Am Behavioral Scientist* 39 (7)
42. Rollin, Stephen A., Rubin, Roberta I., Wright John C. (2000) The Evolution of a Community Based Drug Prevention Program for Youth. *Journal of Alcohol and Drug Education* 45(3)
43. Roy, Elise, Haley, Nancy, Leclerc, Pascale, Cedras, Lyne, Blais, Lucie, Boivin, Jean-Francois. (2003) Drug Injection Among Street Youth in Montreal: Predictors of Initiation. *J. of Urban Health: Bulletin of the New York Acad Med.* 80:1
44. Sale, Elizabeth, Sambrano, Soledad, Springer, J. Fred, Turner, Charles W. (2003) Risk, Protection and Substance Abuse in Adolescents, A Multi-site Model. *J Drug Educ* 33(1)
45. Tang, Catherine S.K., Wong, Connie S.K., Schwarzer, Ralf. (1996) Psychological Differences Between Occasional and Regular Adolescent Users of Marijuana and Heroin. *J Youth and Adol* 25(2)
46. SAMSHA (2002) Early Marijuana Use Linked to Adult Dependence. *Medical Letter on the CDC and FDA* 10/6/2002
47. Saxe, Leonard, Reber, Emily, Hallfors, Denise, Kadushin, Charles, Jones, Delmos, Rindscope, David, Beveridge, Andrew. (1997) Think Globally, Act Locally Assessing the Impact of Community Based Substance Abuse Prevention. *Evaluation and Program Planning* 20(3)
48. Sharma, Hari Kesh, Mohan, Davinder. (1993) Community Response to Drug Abuse: Experience in a Developing Society. In Greenfield and Zimmerman, Eds., *Experiences with Community Action Projects: New Research in the Prevention of Alcohol and Other Drug Problems CSAP Monograph* 14
49. Schatz, Ilana, Schember, Cynthia, Parsons, Jody, Rodriguez, Jose, Young, Charles, and Holder, Harold D. (Date) A Community Based Alcohol and Injury Prevention Project: Reflections from 3 US Communities in T.K. Greenfield and R. Zimmerman, *Experiences with Community Action Projects: New Research in the Prevention of Alcohol and Other Drug Problems CSAP Prevention Monograph* 14
50. Siegal, Harvey A., Carlson, Robert G., Kenne, Deric R., Swora, Maria G. (2003) Probable Relationship Between Opioid Abuse and Heroin Use. *Am Family Physician* 67 (5)
51. Skara, Silvana, Sussman, Steve. (2003) A Review of 25 Long Term Adolescent Tobacco and Other Drug Use Prevention Program Evaluations. *Preventive Medicine* 37
52. Stenbacka, Marlene, Allebeck, Peter, Romelsjo, Anders. (1993) Initiation Into Drug Abuse: The Pathway From Being Offered Drugs to Trying Cannabis, and Progression to Intravenous Drug Abuse. *Scand. J Soc. Med.* 21:1
53. Stephenson, Michael T. (2002) Sensation Seeking As a Moderator of the Processing of Anti-heroin Public Service Announcements. *Communication Studies* 53(4)
54. Tang, Catherine S.K, Wong, Connie S.Y., Schwarzer, Ralf. (1996) Psychosocial Differences Between Occasional and Regular Adolescent Users of Marijuana and Heroin. *J Youth and Adol* 25 (2)
55. Vakalahi, Halaevalu F. (2001) Adolescent Substance Use and Family Based Risk and Protective Factors: A Literature Review. *J Drug Educ* 2001 31(1)
56. Van Etten, M.L., Anthony, J.C. (1999) Comparative Epidemiology of Initial Drug Opportunities and Transitions to First Use: Marijuana, Cocaine, Hallucinogens, and Heroin. *Drug and Alcohol Dependence* 54
57. Van Etten, Michelle L., Neumark, Yehuda D., Anthony, James C. (1999) Male-female Differences in the Earliest Stages of Drug Involvement. *Addiction* 94 (9)
58. Wagenaar, Alexander C., Murray, David M., Gehan, John P., Wolfson, Mark, Forster, Jean L., Toomey, Traci L., Perry, Cheryl L., Jones-Webb, Rhonda. (2000) Communities Mobilizing for Change on Alcohol: Outcomes from a Randomized Community Trial. *J Stud Alcohol* 61
59. Walter, Heather J., Vaughn, Roger D., Cohall, Alwyn T. (1993) Comparison of Three Theoretical Models of Substance Use Among Urban Minority High School Students. *J. of Amer. Acad. Child. And Adolesc. Psychiatry*, 32:5
60. Wielawksi, Irene M. (2002) National Program Report – The Fighting Back Program *Robert Wood Johnson Foundation: To Improve Health and Health Care, Volume VII RWJF Anthology*
61. Wu, Li\_Tzy, Schlenger, William E., Galvin, Deborah M. (2003) The Relationship Between Employment and Substance Use Among Students Age 12 to 17. *J of Adol Health* 2003 32()
62. Xueqin, Grace, Shive, Steve. (2000) A Comparative Analysis of Perceived Risks and Substance Abuse Among Ethnic Groups. *Addictive Behaviors* 25(3)

## Appendix

## Community Coalitions to Prevent Substance Abuse

Article	Name of Program	Program Objectives	Target	Type of Activities	Type of Evaluation	Measures	Results
Aguirre-Molina et al (1994/5)	Perth Amboy Community Partnership for Youth	To reduce risk factors – school failure, early sexual activity, problem behaviors, family conflict and environmental risk - that contribute to ATOD use	Latino youth age 10-17	Policy Education Communication Collaboration Enforcement	Outcome Impact	Field trials re: cigarette sales to minors Smoking rates	Greater decline in cigarette sales to minors No impact on smoking rates
Cheadle et al (2000)	MY Health	To reduce prevalence of violence, teen pregnancy, STDs, and substance abuse among youth of color, and increase the degree to which individuals and groups in a neighborhood work together	Urban minority youth	Education Collaboration Communication	Outcome Impact	<b>Overall effect:</b> health behavior parenting practices <b>Mobilization:</b> # of activities taking place around youth health neighborhood cooperation neighborhood pride perceived effectiveness of neighborhood programs	No program effect on neighborhood mobilization No evidence of an overall program effect
Chou et al (1998)	Midwest Prevention Project					Cigarette, alcohol and marijuana use among baseline users	Secondary effects were found for alcohol, cigarettes and marijuana
Fawcett et al (1997) Lewis et al (1996)	Project Freedom	To reduce the use of illegal drugs, tobacco, and alcohol	Children and adolescents ages 12-17	Policy Enforcement	Process Outcome Impact	Community mobilization Increase in community SA prevention programs or activities	Increased rates of community action

Article	Name of Program	Program Objectives	Target	Type of Activities	Type of Evaluation	Measures	Results
(cont.)						Adolescent substance use rates	Increased changes in programs, policies and practices related to substance abuse
Fawcett et al (1997)						Single nighttime vehicle crashes	Decrease in alcohol use, more modest decrease with marijuana and cocaine
Lewis et al (1996)						Sales of liquor and tobacco to minors	No effect on tobacco use
							Reduced rate of single-nighttime vehicle crashes
							Decrease of liquor sales to minors greater than control sites
							Rise in tobacco sales to minors in both control and program sites
Hallfors (2002)	Fighting Back Program	Reduce the initiation of drug and alcohol abuse among children and adolescents.	Multiple	Policy	Process	Effects on substance use rates and associated harms: substance abuse-related deaths, traffic accidents, and criminal justice system statistics	Program had no significant effect on substance use or associated harms and in some cases (adult oriented programs, higher dose communities) had a negative effect.
Saxe et al (1997)		Reduce drug- and alcohol-related deaths and injuries		Communication	Impact	Programs mounted	Process
Wielawski (2002, 2004)		Decrease in the prevalence of health problems related to or exacerbated by alcohol and drug abuse.		Collaboration		Ethnographic studies including site visits, interviews, etc	Effective coalition-building and implementation of many programs and initiatives took place
		Reduce on-the-job problems and accidents related to alcohol and drugs.		Education			Communities showed a greater awareness of treatment programs
		Reduce drug-related crime.					

Article	Name of Program	Program Objectives	Target	Type of Activities	Type of Evaluation	Measures	Results
Jansen et al (1996)	National Institute on Alcohol Abuse and Alcoholism (NIAAA)  National Cancer Inst. (NCI) and  Center for Substance Abuse Prevention (CSAP)	Summarizes ATOD research agendas and findings up to 1996	Various	Various	Various	Various	More successful programs are:  Comprehensive  Multiple component  Goal-directed  Incorporate individual, family, peers, schools, communities and the workplace  Booster sessions are important for the maintenance of positive effects
Mansergh et al (1996)	Day One Community Partnership Coordinating Council	Plan, coordinate and implement a comprehensive set of effective AOD abuse prevention strategies	Low income, African-American and Latino Youth and their parents	Communication Education Collaboration Policy Enforcement	Process  Outcome	Coalition Efficiency Outcome Efficiency Action Committee Effectiveness Benefits of Involvement Interagency Collaboration Action Committee Activities	5 of 6 action committees made progress toward at least one objective in the previous year.  Coalition members reported efficient coalition function, belief in coalition's ability to be successful, and benefits of participation  Coalition members reported lower ratings of Action Committee Efficiency in comparison to control group.  Theorized to be result of broader, less defined, longer-term objectives and less staff support.

Article	Name of Program	Program Objectives	Target	Type of Activities	Type of Evaluation	Measures	Results
Mansergh et al (1996) Pentz et al (1996) Pentz (1996)	Midwestern Prevention Project/ Project STAR/I-STAR	Targeted avoidance and reduction of drug use, with special emphasis on prevention of cigarette, alcohol, and marijuana use	Middle/junior high school students	Communication Education Collaboration Policy	Process Outcome Impact	See Above/Day One Program Frequency and amount of tobacco, alcohol, and marijuana use and other illicit drug use Psychosocial variables related to drug use	All action committees made progress toward at least one objective in the previous year. Coalition members reported efficient coalition function, belief in coalition's ability to be successful, and benefits of participation Coalition members reported higher ratings of Action Committee Efficiency in comparison to control group. Theorized to be result of more defined, specific, time-limited objectives and greater staff support. Decrease in cigarette and marijuana use for 3 years, and into post-high-school years into early adulthood* Additional post-high school effect on stimulant class of drugs including amphetamines and cocaine, but no effect on depressants
National Center on Addiction and Substance Abuse	CasaSTART	1) to prevent substance abuse and delinquency 2) improve school performance and attendance, 3) develop collaborative relationships between social service agencies, schools and law enforcement,					



Article	Name of Program	Program Objectives	Target	Type of Activities	Type of Evaluation	Measures	Results
National Center on Addiction and Substance Abuse (cont.)		4) improve communication between youth and their families and cultivate involvement of families with schools and social service agencies, and 5) reduce drug sales and related crime in the community	Youth were 8-13 and displayed at least 4 risk factors in 3 broad areas: family, personal, school	Enforcement Education Collaboration	Impact	Substance use Involvement in criminal activity Susceptibility to peers School performance	In relation to comparison group: reduced likelihood of substance use, drug trafficking, committing a violent offense, or being negatively influenced by peers.  Greater likelihood of being promoted to the next grade in school
Pentz (1996)	Various	Review of studies (20) and reviews (4) on community based youth drug abuse prevention programs	Youth	Various	Impact	Frequency and amount of tobacco, alcohol, and marijuana use and other illicit drug use  Psychosocial variables related to drug use	Greater and more sustained effects on heavier use rates (e.g. daily cigarette use, weekly drunkenness) in those programs that include a community-based element  Suggests that school plus community programming is better than school alone.
Wagenaar et al (2000)	Communities Mobilizing for Change on Alcohol	Reduce the number of alcohol outlets that sell to young people  Reduce the availability of alcohol to youths from noncommercial sources such as parents, older siblings, and older peers  Reduce community tolerance of underage drinking	Adolescents  Liquor retailers	Policy  Collaboration  Communication  Enforcement	Outcome  Impact	Access to alcohol from commercial and social sources  Drinking behavior	Alcohol merchants increased age-ID checking and reduced their propensity to sell to minors  18-20 year olds reduced their propensity to provide alcohol to other teens, were less likely to try to buy alcohol, were less likely to drink alcohol, and reported greater difficulty obtaining alcohol  Effect not shown on high school seniors